REVIEWS & NOTICES

Climates of North America, Edited by R. A. BRYSON & F. K. HARE. World Survey of Climatology, Vol. 11, Elsevier Scientific Publishing Company, Amsterdam–London–New York: x + 420 pp., 140 figs, 29.3 × 20.6 × 2.8 cm, Dfl. 137, 1974.

The vast undertaking of the Dutch publishing house of Elsevier to present the climates of the globe in a series called 'World Survey of Climatology' is slowly moving ahead under the supervision of the well-known climatologist, Professor Helmut Landsberg. Eight out of fifteen volumes have been published since 1969, and one of the more recent deals with North America—an impressive volume edited under the leadership of two of the most eminent meteorologists and climatologists resident in that part of the world, namely Professors Reid A. Bryson and F. Kenneth Hare.

In contrast to the earlier review of the world's climates, the famous *Grundriss der Klimakunde*, edited and published in the 1930s under the supervision of W. Köppen, this series is not intended to give comprehensive and detailed reviews of the climates of various parts of the world according to any standardized format written or imposed by editors. Instead, the Editor-in-chief has emphasized from the beginning that he wishes the contributions on climates of different parts of the world to reflect the particular approaches of various authors. As a result of this generally laudable policy of freedom, it has been impossible to avoid the problem that the different volumes in the series exhibit some unevenness in quality, content, and manner of presentation.

This having been said, it is a pleasure to state that Vol. 11, dealing with North America, indeed represents an outstanding example of a good presentation of regional climates and how they are generated. A reason for this fact may be that the presentation has been shared between only a limited number of authors, among whom the Editors have played a very important role.

The volume starts with a general chapter by the two Editors dealing with 'The Climates of North America'. This chapter describes comprehensively both the geographical factors and the mean air-circulation pattern which control the large-scale climatic features of the continent. It also summarizes the main historical perspective of these features.

The authors have chosen to present the geographical factors involved, and their influence upon the flux of air-masses at the surface, before discussing the air-circulation pattern aloft. I think that this is a rather normal procedure but it seems that arguments could also be given for doing it the other way around! In principle, it is the upper-air general circulation, as dependent upon the latitudinal radiation conditions, which is the basic factor that controls the air-mass flux at the surface—which in turn is influenced by the geographical features.

Another question may be raised regarding the suitability of choosing streamlines for presenting the air circulation both at the surface and aloft. A more common approach in discussing upper-air circulation than to use streamlines in the 300 mb level would have been to use isohypses of the 500 mb level and to discuss the circulation for instance by introducing the concept of low- and high-index circulation. It seems to the reviewer that the mean streamlines may give a fairly good picture of the circulation to the non-specialist, both at the surface and aloft, but that important information for the specialist is lost by the omission of the isohypse picture for the upper-air circulation. One would also have liked to have been given some ideas about the recent changes in the general circulation-pattern over North America as a complement to the presentation of the historical perspectives of climate.

These questions are, however, basically academic. The important fact remains that a very thorough discussion of the general circulation has been presented as a firm basis for the following chapters dealing respectively with the details of the climate of (a) Canada and Alaska, (b) the conterminous United States, and (c) Mexico.

It is a pleasure to see all the details which have been presented in particular for the United States and Canada. In pleasant contrast to many chapters in other volumes of the World Survey of Climatology, the maps and figures are abundant. Yet naturally the figures and tables in many cases reflect the availability of data, both for the United States and Canada, of special derived climatic elements which may not exist for other parts of the world. They also reflect the excellent potentialities of the use of tapes and computers to derive such elements. Of particular interest is the presentation of variability of temperature and precipitation, as well as the thorough treatment of elements such as radiation and evapotranspiration conditions for which it is often difficult to find sufficient information and data. It has not been possible to treat all the same sophisticated elements for the Mexico area; but it should be stressed that also for that part of the continent the discussion of the climate, based on a comprehensive discussion of the general circulation of the atmosphere and the variability of climatic conditions in both space and time, is given due consideration as far as information is available. It is a pity, however, that there is no similar discussion about the main historical perspectives of climatic conditions in Mexico to that presented for the United States and Canada. At least there are data available from Mexico to consider the developments over the last 100 years, and comparisons for that period with the developments in Canada and the United States would have been of particular interest.

In summary, there is every reason to believe that this volume will for a long time to come provide an excellent reference basis for discussions on North American climatic conditions and their fluctuations. It would also be desirable if this volume could provide an example for modern presentation of regional climates to be used in the preparation of volumes in the World Survey of Climatology series that have not yet been published, and for new editions of some of those that have.

CARL A. C. WALLÉN
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Reviewing the International Order (RIO) Interim Report, [Coordinated by JAN TINBERGEN]. Bouwcentrum International Education, Rotterdam, Holland: [32 pp.], 29 × 21 × 0.3 cm, paper covers, [no price indicated], 1975.

It has been said that the art of teaching is judicious simplification. The first report of the Club of Rome, published under the title *Limits to Growth*, was greeted with raptuous applause from the many who felt that 'Man cannot live by bread alone', and by bitter vilification by those who felt professionally and economically threatened by it. The study led by Dennis L. Meadows was obviously highly oversimplified and mechanistic—little more than a cartoon strip—as if to say that Mickey Mouse learns that he can't have his cheese and eat it. The great contribution of the Meadows *et al.* report was to show millions of people that multiple problems need multiple solutions and hence warn them to be suspicious for ever of the simple solutions

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served up by the 'experts' and the politicians (thereby being 'hoist with his own petard' or blown up by his own bomb).

The second report of the Club of Rome was contained in a book by M. Mesarovic & E. Pestel, *Mankind at the Turning Point*, published more recently (E. P. Dutton/ Readers Digest Press, New York, vii + 210 pp., 1974). This book purports to avoid the weaknesses of the Meadows *et al.* study by treating the world as a number of regions each with its own distinct characteristics, and by introducing a number of human decisions or reactions to the evolving regional and global situation. The model does not show the simplified global collapse of the world system as in the Meadows *et al.* model. Instead, collapse is seen at a regional level—by a series of specific causes, each due to the local inability to treat interrelated problems in an integrated fashion.

The most interesting aspects of the study are those computer analyses related to specific issues such as food, oil, raw materials, etc. Among some of the conclusions thus arrived at are the fact that, in terms of aid programmes, it is not the amount but the timing which is important, and that, for prices of raw materials, a steady rise is the most beneficial—to developing and developed countries alike.

The second report of the Club of Rome thus contrasts strongly with the first in the specificity of its recommendations for survival.

It is almost with a sense of relief, however, that one reads the third report of the Club of Rome, published in draft form in time for the Seventh Special Session of the U.N. General Assembly. The report, *Reviewing the International Order* (RIO), is appropriately the work of the eminent economist Jan Tinbergen.

Here is a document without computer print-outs, which claims to have no answers and indeed asks specifically for help in moving towards any answers, but which at the same time does present a series of tentative results, proposals, and recommendations, that go to the very heart of the present global crisis. Specifically, the report covers global issues of finance, economics, industrialization, food, energy and raw materials, the oceans, multinational corporations, science and technology, and disarmament. The recommendations include the transferring of growth from the developed to the developing world, stimulating self-reliance—particularly in food production—and re-deploying technology to serve the needy rather than the affluent. Many of the detailed recommendations are admirable, many go too far to be easily accepted by the developed countries, while many do not go far enough to meet the multiple needs of the developing countries; but all are too important to be left undiscussed. The declared aim of RIO is to open up a global dialogue. Let such a dialogue develop, and then this Third Report will be really worthy of the highest aspirations of those who founded the Club of Rome seven years ago.

MICHAEL G. ROYSTON
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Garden Pests and Diseases, by M. H. DAHL & T. B. THYGESEN. Blanford Press, London: 223 pp., 313 illustr., 12.5 × 18.8 × 1.2 cm, £2.50, 1974.

If you find a Privet Hawk-moth caterpillar in the garden, do you want to know the best way to kill it? And what about Eyed Hawk or Poplar Hawk caterpillars feeding on the willow trees? This book tells how to recognize garden 'pests and diseases' and how to detroy them. The message is clear: if there is something feeding on plants, identify it from the book and kill by the recommended method. The book, originally published in Danish, is claimed to have been modified for the English gardener, but 'most of the information... will be of value to gardeners throughout the world'—a statement which cannot be corroborated, as the book only deals with north European species.

A book such as this could prove extremely dangerous. It gives the erroneous impression that plant-feeders can be destroyed and at the same time predators and parasites can be encouraged. It fails to acknowledge that the garden ecosystem is relatively balanced and that, to have 'useful' insects such as ladybirds, there must also be food for them in the form of aphids. Many of the insects listed as pests, including the Privet, Eyed, and Poplar, Hawk-moths, cannot by any stretch of the imagination be regarded as harmful to gardening. Indeed many of them are attractive and well worth encouraging, so it is unnecessary or worse to try and destroy them.

The book has been favourably reviewed in several biological journals, no doubt because it is well-produced and has attractive illustrations. In some countries books are banned for political, moral, or social reasons, and I am tempted to suggest that this one should be banned on the grounds that it is apt to be seriously misleading, so that in the wrong hands it could be as harmful as DDT. I hope that environmental conservationists will persuade their gardener friends not to use books of this kind but instead to take a more sympathetic and understanding view of the balance of Nature in the garden.

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Snowdon Summit, a Report Prepared by LEONARD MANASSEH AND PARTNERS at the Request of the Countryside Commission. John Dower House, Crescent Place, Cheltenham: 55 pp., numerous maps and plans, 29 × 21 × 1 cm (mimeogr.), 80 pp., 1975.

This report was commissioned as the result of a meeting in June 1972, convened and chaired by the Minister of State for Wales. It is now intended that the meeting be reconvened to consider it, and it is obviously desirable that a final report and recommendations should then be published. The consultants have considered the present situation and the pressures involved—an open mountain of great popular appeal which draws in people on foot and by the mountain railway.

During the summer holidays, as many as 2,500 walkers may be on the mountain paths in one day, with the railway bringing roughly 1,000 more to the summit. The summit may receive up to 2,500 people in a day. The vegetation of Snowdon is of major biological and conservation interest, but is very vulnerable to erosion as a result of public pressure. Some of the land comprises hill grazings, and part is a National Nature Reserve. There is an urgent need to protect both the scientific and the farming interests, as well as to restore the eroding paths and to cater for the particular pressures on the summit itself.

It is proposed that a single body be set up to control all aspects of management of the area. Prescriptions are given for the detailed management under a four-years programme at a total cost of around £95,000, after which annual upkeep costs of £9,500 are estimated (in addition to the expenses of the two existing teams of wardens).

Various alternative suggestions are made for improving access for the public, within the main conservation requirements. The favoured suggestion involves improvement of the railway service, and replacement of the existing summit hotel with a larger building which would be dug into the mountain, thereby reducing both the bulk and